
MAGTF Meteorology and Oceanography (METOC) Support



U.S. Marine Corps

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FOREWORD

1. PURPOSE AND SCOPE

Marine Corps Warfighting Publication (MCWP) 3-35.7, *MAGTF Meteorological and Oceanographic Support*, provides the information needed by Marines to understand, plan, and conduct Marine air-ground task force (MAGTF) meteorological and oceanographic (METOC) operations. The focus of MCWP 3-35.7 is METOC effects on operations and missions. It addresses METOC planning requirements, command relationships, METOC support capabilities, and external support requirements. Detailed information is provided on:

- METOC support organization and structure
- Sample METOC support products
- Weather and oceanographic effects on MAGTF operations
- Meteorological critical values
- Sample Annex H (METOC Services) for operation orders and plans.

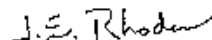
2. SUPERSESION

MCWP 3-35.7 is a new publication.

3. CERTIFICATION

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS



JOHN E. RHODES
Lieutenant General, U.S. Marine Corps
Commanding General
Marine Corps Combat Development Command

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To Our Readers

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Unless otherwise stated, whenever the masculine or feminine gender is used, both men and women are included.

MAGTF Meteorological and Oceanographic Support

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Chapter 1

Introduction

“Know the enemy, know yourself;
Your victory will never be endangered.
Know the ground, know the weather;
Your victory will then be total.”
— Sun Tzu, *The Art of War*

1001. General

Weather and oceanographic conditions are factors over which commanders have no control but that have the potential to affect every combatant, piece of equipment, and operation. Weather becomes more significant to success in the modern battlespace as advanced technological weapons and support systems are fielded because of their vulnerability to adverse weather. Effective oceanographic information and support is especially critical to Marine expeditionary forces (MEFs) as they seek broader and bolder operational opportunities to project combat power from the sea. Many battles and campaigns have been won or lost as a result of the impact of weather. Although commanders have no control over these factors, they can take advantage of weather and oceanographic conditions or minimize their effects through planning and training. To do so, commanders and planners need support from meteorological and oceanographic (METOC) elements operating from the tactical to the national and international levels.

1002. Mission

The mission of the Marine Corps METOC Service is to provide meteorological, oceanographic, and space environmental information, products, and services that are required to support Marine Corps operations and other military operations as may be directed.

1003. Historical Perspective

Weather and oceanographic support is critical to tactical operations and operational-level planning. History is replete with examples of the weather's and oceanography's effects on the timing, as well as the success or failure, of military operations on a variety of battlefields. Some examples are the Spanish Armada, the Battle of Trenton, Hitler's attempt to take Moscow, the Battle of Stalingrad, Tarawa, Operation Overlord, the Battle of the Bulge, the Chosin Reservoir, and the Inchon Landing. The battlespace of tomorrow will provide examples of victories and defeats that are attributable to the skillful integration, or lack of integration, of weather in military planning and the execution of combat operations.

1004. General Principles

The following principles comprise the cornerstone of METOC support in all operations. By applying these principles, METOC support is better prepared to enhance and sustain operations. These principles include:

- Accuracy of data and information
- Timeliness of data and information
- Relevance to the operational user
- Unity of effort
- Readiness
- Evaluation of effectiveness.

a. Accuracy of Data and Information

Commanders depend on accurate weather and oceanographic information to plan and direct their operations. Inaccurate information can cost lives, undermine the successful execution of an operation or mission, waste resources, and impair readiness. This is true anytime—whether at peace or at war. The complexity of the mission and amount of detail required; the capability to collect data and model and forecast the weather, sea, and coast conditions; the perishable nature of such data; and human error all affect accuracy. Therefore, METOC information will never be totally free of inaccuracies. These factors must be explained and quantified to decisionmakers so that they may place an appropriate weight and level of confidence on them when making decisions.

b. Timeliness of Data and Information

Marine air-ground task force (MAGTF) METOC support is effective when a commander receives accurate weather and oceanographic information in time to consider its impact on the decision to be made. METOC information that could influence an operation is worthless when the commander receives it after an opportunity has passed, an irreversible decision has been made, or an operation is complete. Communication links are vital to support and sustain the timely dissemination of METOC information and are key to the overall capability and success of MAGTF METOC operations.

c. Relevance to the Operational User

METOC support provides commanders and planners with an understanding of the weather, sea, and coastal situations and the impact of these on threat operations. It bears on each echelon's current, planned, and alternate courses of action (COAs). METOC personnel and those supporting METOC operations must tailor the information for specific applications and missions so that the user can quickly identify and apply relevant information without additional analysis or manipulation. Attaining this goal requires METOC personnel to understand operational user needs and implies a user's responsibility to identify

specific METOC information requirements for content, form, medium, presentation, timeliness, and frequency of delivery.

d. Unity of Effort

Weather information that influences a commander's decision usually cannot be derived from data obtained from a single source. Instead, METOC data from many sources must be assembled into a database. That database contains a complete and integrated summary of weather and oceanographic conditions over an extended region and time that affect the area that is of interest to the commander. To accomplish this task, METOC organizations at all levels must have clearly defined functions that eliminate duplication, maximize sharing of information, and are mutually supportive of the overall METOC support concept. The responsibilities of each organization must be clear, explicit, and understood by all.

e. Readiness

METOC units, databases, products, and equipment must be responsive to the requirements of commanders and their forces. All METOC resources must be maintained in a degree of readiness that ensures employment capability commensurate with the unit's mission.

f. Evaluation of Effectiveness

The overall effectiveness of METOC support is based on the successful and effective accomplishment of specific military missions. Each METOC or supporting unit must evaluate effectiveness on the basis of the principles stated above. This requires METOC organizations at all levels to be fully integrated into all unit planning and operations. Such interaction leads to mutual understanding and trust throughout the warfighting team.

g. Methods of Providing Weather Support